

Remarks:

Claims 1-16 are pending in the above-identified patent application. By this Amendment Applicant has amended claims 1-8, and has added new claims 9-16, in order to further define the present invention.

Several amendments have also been made to the specification in order correct various informalities. No new matter has been added as a consequence of these amendments.

New claims 9-16 have been added in order to more fully define various features of the invention defined by the previously-pending claims 1-8.

In the above Office Action, the Examiner has rejected pending claims 1-8 under 35 U.S.C. §102(b) as being anticipated by Cheung et al (EP0695059A1). A portion of the Examiner's characterization of Cheung made in support of the outstanding rejection of claim 1 is set forth below:

As shown in Figs. 1-5, Cheung discloses the same data communications system (Fig. 1), a first network (e.g., 10, Fig. 1 or 60, Fig. 2) with nodes (A/E, Figs. 1 or 2),

Applicant respectfully disagrees that the cited portion of Cheung describes the claimed first network. Rather, these portions of Cheung merely describe the communication ranges associated with individual wireless nodes. For example, the "first network (e.g., 10, Fig. 1 or 60, Fig. 2)" referred to by the Examiner corresponds to a Dynamic Service Area or "DSA" or a Basic Service Area "BSA" described by Cheung as follows:

The physical area that a wireless node must be within to be within range of the AP is call the AP's Basic Service Area (BSA). If a mobile network node is located within the BSA of a particular AP, that wireless node will be able to receive transmissions sent by that AP.

Each wireless node has a limited range within which it can communicate. This range is called the Dynamic Service Area (DSA) of the wireless node in this specification. Other nodes within an wireless node's DSA will normally be able to receive transmissions from the wireless node.

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Applicant thus respectfully submits that a DSA, such as the DSA 10, cannot be a network as indicated in the above Office Action, since it is described by Cheung as merely corresponding to the *communication range* of a wireless node. Nor can a BSA, such as the BSA 60, be a network since this is described by Cheung as corresponding to a *physical area* within which a wireless node must be located to be in communication with an AP. Accordingly, it is respectfully

submitted that neither a BSA nor a DSA is described by Cheung as corresponding to a network or to a collection of nodes, and hence neither a BSA nor a DSA is capable of corresponding to the claimed first or second networks.

For the reasons discussed above, Applicant respectfully submits that the Examiner has not identified first and second wireless networks within Cheung as presently claimed. Accordingly, it follows that the recitation of “means for forwarding, from said first network to said second network”, is also not described by Cheung.

Even accepting arguendo that Cheung in some way describes first and second wireless networks, Cheung does not implement the functionality of Applicant’s claimed internetworking node (see, e.g., claim 2). For example, Cheung does not describe any mechanism or node for communicating network information from a node of one network to a node of another network. Specifically, even though the AP1 or AP2 of the Cheung system is described as receiving network address information from the nodes with which it is in communication, this information is not then transmitted to other wireless nodes associated with a different wireless network in the manner presently claimed (see claim 2). In short, the Cheung system does not contemplate the reporting of network information associated with a first wireless network to an internetworking node disposed to communicate such information to one or more nodes of a second wireless network.

Notwithstanding the clear distinctions described above between Cheung and the present invention, each of the previously-pending independent claims has been amended to more particularly highlight a particular characteristic of the first or second network of the invention. Specifically, these amended claims now generally recite that message information addressed to a given node of a first network is forwarded, when received at the first network, from the first network to a second network via a wireless internetwork path once the node has moved to the second network. The wireless internetwork path is further described as including one or more wireless connections involving nodes of the first and second networks. This aspect of the present invention is describing in the specification as follows:

In order to establish a connection between nodes D1 and A1, node L3 establishes a connection to node L2 which in establishes a connection to node A1. Once these connections have been made, node A1 will forward any data packets, addressed to D1 that it has received over the hard-wired network 12.

[6:20-23]

It is noted that although node D1 is a member of wireless network 20 and node L3 is a member of wireless network 22, node D1 nonetheless receives message information addressed to it while within the coverage area of the second wireless network 22 from node L3. Consistent with the invention, this is facilitated by the establishment of wireless connections from node L3 to node L2 and from node L2 to node L1 (which is in communication with node A1). Accordingly, packets addressed to node D1 and received by node A1 over the hard-wired network 12 may be forwarded to node D1 via these wireless connections.

This use of a wireless internetwork path consistent with the present invention contrasts with the approach of Cheung and the conventional cellular system described by the Examiner. In short, these system do not operate to forward message information addressed to a given node of a first network to a second network over one or more wireless links supported by the wireless nodes from both networks. For example, in the Cheung system message information addressed to a given wireless node is simply not described as being "forwarded" in the manner contemplated by the present invention from one network to another upon a given node moving to a different network. Specifically, none of the wireless nodes within the Cheung system (i.e., wireless nodes A, B, C, D and E) are described as being operative to establish wireless connections with other of such wireless nodes in order to effect this type of forwarding.

The Cheung system proposes an entirely different type of mechanism for facilitating communication with a wireless node which has roamed from the coverage area of one AP to another AP. In particular, such a wireless node "de-registers" upon losing contact with a particular AP and then "re-registers" upon coming into contact with another AP. Once the wireless node has become registered with the new AP, the Cheung system does not include a mechanism for forwarding message information addressed to the node from one AP to the next in the manner contemplated by the invention (i.e., via wireless connections supported by the wireless nodes A, B, C, D or E). This operative characteristic of the Cheung system is described below:

Referring to figure 4 by way of an example, wireless node A originally located at position 200, is registered with AP1. It therefore communicates with wired network node X via AP1. As A moves to an area which is not covered by any AP, as is illustrated as position 210, it is disconnected from the network. Its communication with X is severed until it becomes registered by another AP. This when as A moves into AP2's BSA, as shown at 220, and AP2 overhears it. At this point, A can again communicate with X, this

time via AP2. AP2 will send a registration notice on the wire LAN, informing other APs, in this case AP1, that AP2 has now registered node A, so that AP1 should deregister it. AP1 may have already deregistered A if AP1 had not heard A after a set period of time.
[13:35-49]

The present invention advantageously obviates the need for the type of registration/deregistration with different access points required in the Cheung system through establishment of a wireless interconnection path supported by wireless nodes from different networks in the manner presently claimed. Applicant observes that one motivation for conception of this aspect of the invention relates to the difficulty in continuing IP-based communication even when moving between networks having different IP addresses. Systems such as that described by Cheung are incapable of overcoming this difficulty, since it is impermissible to simply "register" an IP address for a device associated with a given network in a different IP network (i.e., a network having a different network address). Rather than requiring a device previously registered in a first network to instead become registered in a second network upon roaming to it, the present invention provides a unique wireless internetwork path through which message information addressed to the device can be forwarded to it after the device has roamed to a different network. Cheung's wireless nodes A-E are not described as being configured to support this type of wireless internetwork path, and Cheung in fact teaches away from this approach by instead relying upon de-registration/re-registration of wireless nodes when roaming.

Applicant observes that certain of the pending claims also define an additional distinction between the system of the claimed invention and that described by Cheung. Specifically, claims 9, 10, 11, 15 and 16 are directed to embodiments of the invention in which the wireless internetwork path is determined by a wireless node based upon one or more connectivity advertisements broadcast by one or more other wireless nodes. Applicant respectfully submits that the wireless nodes of the Cheung system are not adapted to make such determinations. This aspect of the present invention is described by the present specification as follows:

Referring to FIG. 1, when D1 relocates to a position within the wireless coverage area of network 22 it listens to the connectivity information broadcast by the nodes within its range (device D1 is shown in phantom in network 22). If device D1 becomes located sufficiently near node L3, it may listen to its connectivity advertisement and determine a path over which data may be routed from node A1. After making this determination, D1 requests a connection to node A1 via a node along the chosen path (e.g., node L3).
[6:15-20]

That is, device D1 is adapted to determine a particular wireless internetwork path over which data addressed to it may be routed from network 20 upon device D1 becoming located proximate network 22. In addition, this internetwork path is defined to include wireless connections involving nodes from each of the first and second networks. Applicant respectfully submits that none of the cited prior art describes this aspect of the present invention.

Applicant further respectfully submits that all of the above-described features of the present invention which distinguish it from the Cheung reference are equally applicable to distinguishing the invention from the conventional cellular system described by the Examiner in the above Office Action.

Applicant also notes that certain of the pending claims now recite that the wireless interconnection path is determined based upon one or more connectivity advertisements broadcast by one or more wireless nodes. In certain embodiments each such connectivity advertisement identifies the address of the node from which it is broadcast and one or more additional addresses corresponding to other of the nodes within its network. The specification provides support for the connectivity advertisement recited by the pending claims at, for example, page 5, lines 1-4:

In a preferred implementation each slave node transmits an advertisement identifying its address and the services it offers. Each such advertisement also incorporates the address of all other slave nodes from which advertisements are received by the slave node transmitting a given advertisement.

Accordingly, in view of Applicant's arguments and amendments set forth herein, it is respectfully requested that the Examiner reconsider the outstanding rejection under the cited prior art. The undersigned would of course be available to discuss the present application with the Examiner if, in the opinion of the Examiner, such a discussion could lead to resolution of any outstanding issues.

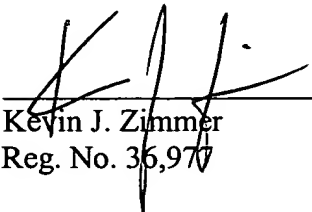
The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §§1.16, 1.17, and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 03-3117.

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